



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,166	01/19/2004	Kiyoshi Takahashi	5077-000202	8996
27572	7590	06/13/2006	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			CANNING, ANTHONY J	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	
			2879	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/760,166	Applicant(s) TAKAHASHI ET AL.	
	Examiner Anthony J. Canning	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/19/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-18 in the reply filed on 7 March 2006 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 6, 8, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaneko et al. (U.S. 6,232,719 B1; of record).
4. As to claims 1 and 6, Kaneko et al. disclose a method for manufacturing a high-pressure discharge lamp comprising a luminous bulb (see Fig. 1, item 1; column 6, lines 29-30), in which a luminous substance is enclosed (see Fig. 1, item 5; column 6, lines 26-27), and a sealing portion for retaining the airtightness of the luminous bulb (see Fig. 1, item 4; column 6, lines 18-23), the method comprising the steps of: (a) preparing a glass pipe designed for use in a discharge lamp, which pipe includes a luminous bulb portion that will be formed into the luminous bulb of the high-pressure discharge lamp (see Fig. 3, the rounded portion into which the electrode extends), and a pair of side tube portion extending from the luminous bulb portion (see Fig. 27; column 12, lines 1-11); and (b) forming the sealing portion from the side tube

portion (see Fig. 12, items 54 and 55; column 9, lines 15-17) with electrodes (see Fig. 1, item 3; column 7, line 32), wherein the sealing-portion formation step (b) includes the steps of: (c) preparing a compound glass tube that includes an outer tube made of a first glass and an inner tube made of a second glass (see Fig. 12, items 54 and 55; column 9, lines 15-17), the outer tube being located in tight contact with the periphery of the inner tube (see Fig. 13, item 201; column 9, lines 19-21), the second glass having a lower softening point than that of the first glass (column 8, lines 60-67), the side tube portion being formed of the first glass (see Fig. 27, item 502; column 12, lines 17-24; the sealing portion here is quartz glass); (d) inserting the compound glass tube into the side tube portion, and then heating the side tube portion, thereby tightly attaching the side tube portion to the compound glass tube (column 10, lines 52-60); and (e) heating, after the attachment step (d) (column 10, lines 52-60), a portion including at least the compound glass tube and the side tube portion at a temperature higher than the strain point temperature of the second glass (column 10, lines 52-60; the softening point is reached which is higher than the strain point).

5. As to claim 2, Kaneko et al. disclose the method of claim 1. Kaneko et al. further disclose that the compound glass tube preparation step (c) includes: inserting the inner tube made of the second glass into the outer tube made of the first glass, and reducing pressure in a gap between the outer and inner tubes, and heating at least the outer tube, thereby bringing the outer and inner tubes in tight contact with each other (see Fig. 12, items 51, 54 and 55; column 9, lines 15-40).

6. As to claim 5, Kaneko et al. disclose the method of claim 1. Kaneko et al. further disclose wherein the inner tube of the compound glass tube has a multilayer structure, while the

Art Unit: 2879

outer tube thereof is composed of a single layer; the outer tube is made of quartz glass (see Fig. 1, item 1; column 6, lines 29-30); and at least one of the multiple layers forming the inner tube is a glass layer made of glass which contains silica and at least one of 15 wt % or less of alumina and 4 wt % or less of B (column 9, lines 37; Vycor is a borosilicate containing silica, alumina and boron).

7. As to claim 8, Kaneko et al. disclose the method of claim 6. Kaneko et al. further disclose that wherein the compound glass tube and the electrode structure are formed into one body (see Fig. 11, item 57; column 9, lines 9-14).

8. As to claim 16, Kaneko et al. disclose the method of claim 6. Kaneko et al. further disclose that the electrode structure includes the electrode rod (see Fig. 28b, item 510; column 12, lines 59-61), a metal foil connected to the electrode rod (see Fig. 28b, item 511; column 12, lines 59-65), and an external lead connected to the metal foil (see Fig. 28b, item 512; column 12, lines 59-65); and the compound glass tube is inserted into the side tube portion so that the compound glass tube covers at least the connection portion of the electrode rod and the metal foil (see Fig. 28b, the portion surrounding the electrode and metal foil).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3, 4, 7, 9-12, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (U.S. 6,232,719 B1; of record).

11. As to claim 3, Kaneko et al. disclose the method of claim 1. Kaneko et al. fail to disclose that the heating step (e) is performed at a temperature lower than the strain point temperature of the first glass. It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose that the heating step (e) is performed at a temperature lower than the strain point temperature of the first glass, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

12. As to claim 7, Kaneko et al. disclose the method of claim 6. Kaneko et al. further disclose the steps of: (c) introducing a luminous substance into the luminous bulb portion, after said one sealing portion has been formed (column 11, lines 4-21); (d) inserting, after said one sealing portion has been formed, a compound glass tube and an electrode structure that includes at least an electrode rod, into the other of the pair of side tube portions (see Fig. 1, items 3 and 4; column 6, lines 25-26), and then heating said other side tube portion to cause said other side tube portion to shrink, thereby forming the other of the pair of sealing portions (column 10, lines 52-60), wherein the compound glass tube includes an outer tube made of a first glass and an inner tube made of a second glass (see Fig. 12, items 54 and 55; column 9, lines 15-40), the outer tube being located in tight contact with the periphery of the inner tube, the second glass having a lower softening point than that of the first glass (molybdenum powder will lower the softening point of the glass below that of the first glass), the side tube portions being formed of the first glass (see Fig. 27, item 502; column 12, lines 17-24; the sealing portion here is quartz glass); and

heating the resultant lamp assembly, at a temperature (column 10, lines 52-60), where the lamp assembly includes at least the compound glass tubes and the side tube portions (see Fig. 1, item 4). Kaneko et al. fail to disclose heating the resultant lamp assembly, in which both the sealing portions and the luminous bulb have been formed, at a temperature higher than the strain point temperature of the second glass but lower than the strain point temperature of the first glass. It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat the lamp assembly at a temperature higher than the strain point temperature of the second glass but lower than the strain point temperature of the first glass, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

13. As to claims 9 and 10, Kaneko et al. disclose the method of claims 1 and 7. Kaneko et al. fail to disclose the length of the heating step. It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose the heating step is performed for 2 hours or more, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

14. As to claims 11 and 12, Kaneko et al. disclose the method of claims 9 and 10. Kaneko et al. fail to disclose the length of the heating step. It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose the heating step is performed for 100 hours or more, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

15. As to claims 4 and 17, Kaneko et al. disclose the method of claims 1 and 6. Kaneko et al. further disclose that the outer and inner tubes that form the compound glass tube are each composed of a single layer (see Fig. 12, item 54); the first glass forming the outer tube contains 96 wt % or more of silica (see Fig. 1, item 4; column 6, lines 30-31); and the second glass forming the inner tube contains silica and at least one of 15 wt % or less of alumina and 4 wt % or less of B (see Fig. 12, item 55; column 9, lines 30-40; Vycor contains 96% silica, and the rest alumina and boron). Kaneko et al. fail to disclose that the first glass forming the outer tube contains 99% silica. It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose that the first glass forming the outer tube contains 99% silica, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ.

16. As to claim 18, Kaneko et al. disclose the method of claim 7. Kaneko et al. further disclose that the high-pressure discharge lamp is a high-pressure mercury lamp, and mercury serving as the luminous substance is enclosed in an amount of 150 mg/cm³ or more, which is determined based on the internal volume of the luminous bulb (column 12, lines 25-33; 90 mg/.45cc = 200mg/cm³).

17. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (U.S. 6,232,719 B1; of record) in view of Hataoka et al. (U.S. 6,890,236 B2).

18. The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C.

103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

19. As to claims 13 and 14, Kaneko et al. disclose the method of claims 1 and 7. Kaneko et al. fail to disclose that the heating step (e) is performed so that when the sealing portions are measured by a sensitive color plate method utilizing a photoelastic effect, a compressive stress of from 10 kgf/cm² to 50 kgf/cm² inclusive extending in each said sealing portion in the longitudinal direction of the side tube portion is present in the region formed of the second glass.

Hataoka et al. disclose that the heating step (e) is performed so that when the sealing portions are measured by a sensitive color plate method utilizing a photoelastic effect (column 14, lines 37-41), a compressive stress of from 10 kgf/cm² to 50 kgf/cm² inclusive extending in each said sealing portion in the longitudinal direction of the side tube portion is present in the

region formed of the second glass (column 3, lines 11-19). This compressive stress will join the tubular portion with the sealing member.

Therefore, it would have been obvious to one having ordinary skill in the art. at the time the invention was made, to modify the method of Kaneko et al. to include that the heating step (e) is performed so that when the sealing portions are measured by a sensitive color plate method utilizing a photoelastic effect, a compressive stress of from 10 kgf/cm² to 50 kgf/cm² inclusive extending in each said sealing portion in the longitudinal direction of the side tube portion is present in the region formed of the second glass, as taught by Hataoka et al., to join the tubular portion with the sealing member.

20. As to claim 15, Kaneko et al. and Hataoka et al. disclose the method of claim 14. Hataoka et al. further disclose that the compressive stress is generated in each of the pair of sealing portions (column 3, lines 20-21). This compressive stress will join the tubular portion with the sealing member.


Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the method of Kaneko et al. to include that the compressive stress is generated in each of the pair of sealing portions, as taught by Hataoka et al.. to join the tubular portion with the sealing member.

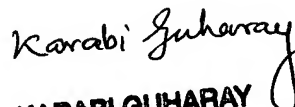
Contact Information

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Canning 
31 May 2006


KARABI GUHARAY
PRIMARY EXAMINER